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DETERGENT COSMETIC COMPOSITIONS AND USE

The present invention relates to novel cosmetic compositions with improved properties intended simultaneously for cleaning and for conditioning keratinous substances, such as the hair, and comprising, in a cosmetically acceptable aqueous vehicle, at least one anionic surfactant, at least one amphoteric surfactant and at least one specific carboxylic acid ester, the anionic surfactant/amphoteric surfactant ratio by weight being less than or equal to 3. The invention also relates to the use of said compositions in the abovementioned cosmetic application.

Detergent compositions (such as shampoos) based essentially on conventional surface-active agents of, in particular, anionic, non-ionic and/or amphoteric type, but more particularly of anionic type, are commonly used for cleaning and/or washing keratinous substances, such as the hair. These compositions are applied to wet hair and the foam generated by massaging or rubbing with the hands makes it possible, after rinsing with water, to remove the various types of dirt initially present on the hair or the skin.

These base compositions certainly have a good washing power but the intrinsic cosmetic properties which are attached to them remain fairly weak, however,

in particular because of the fact that the relatively aggressive nature of such a cleaning treatment can, in the long term, result in more or less marked damage to the hair fiber, related in particular to the gradual  
5 removal of the lipids or proteins held in or at the surface of the hair fiber.

Consequently, in order to improve the cosmetic properties of the above detergent compositions, and more particularly of those which are  
10 called upon to be applied to sensitized hair (i.e. hair which is found to be damaged or embrittled, in particular under the chemical action of atmospheric agents and/or of hair treatments, such as permanent waves, dyeings or bleachings), it is now usual to  
15 introduce, into the latter, additional cosmetic agents, known as conditioning agents, intended mainly to repair or limit the harmful or undesirable effects induced by the various treatments or attacks to which the hair fibers are more or less repeatedly subjected. These  
20 conditioning agents can, of course, also improve the cosmetic behavior of natural hair.

Provision has already been made to use insoluble conditioning agents for this purpose. These insoluble compounds exhibit the disadvantage of being  
25 difficult to maintain as an even dispersion in the medium.

Provision has already been made, in order to maintain them in suspension, to use ester or ether derivatives comprising a long chain (dispersing agents) or polysaccharides, such as xanthan gum (gelling agents). However, the dispersing agents exhibit problems of crystallization, which sometimes result in a change (increase) in the viscosity of the compositions over time; the gelling agents also exhibit disadvantages, namely, on the one hand, that the foam of the detergent compositions comprising polysaccharides is difficult to develop (poor initiation of foam) and that, on the other hand, the compositions do not have a smooth texture and flow in waves, which is not very highly appreciated by the users. Furthermore, these various agents do not make it possible to obtain transparent or clear compositions.

The aim of the present invention is to provide compositions which do not exhibit the disadvantages of the abovementioned compositions.

The conditioning agents must also be carried on the treated keratinous substances with a view to conferring on them, depending on the application, properties of softness, of gloss and of disentangling.

Thus, following considerable research carried out on the question, it has now been found by the Applicant Company that, by using a specific washing base, at least one specific carboxylic acid ester, it

The industrial implementation is extremely easy and the cosmetic properties of the shampoos are excellent.

In the absence of additional insoluble compounds, the compositions obtained are also transparent. They can comprise significant amounts of carboxylic acid ester while retaining good transparency and while having good cosmetic properties.

Thus, a subject-matter of the present invention is novel detergent and conditioning cosmetic compositions, characterized in that they comprise, in a cosmetically acceptable aqueous medium, (A) a washing

base comprising at least one anionic surfactant and at least one amphoteric surfactant, (B) at least one water-insoluble carboxylic acid ester chosen from

- 1) - monoesters of saturated or unsaturated and linear or branched monocarboxylic acids and of saturated or unsaturated and linear or branched monoalcohols,
- 2) - di- or triesters of saturated or unsaturated and linear or branched di- or tricarboxylic acids and of saturated or unsaturated and linear or branched monoalcohols,
- 3) - mono-, di- or triesters of saturated or unsaturated and linear or branched di- or tricarboxylic acids and of saturated or unsaturated and linear or branched dialcohols,
- 4) - monoesters of saturated or unsaturated and linear or branched monocarboxylic acids and of saturated or unsaturated and linear or branched dialcohols,
- 5) - di- or triesters of saturated or unsaturated and linear or branched monocarboxylic acids and of unsaturated dialcohols of any kind or of saturated dialcohols having more than 4 carbon atoms,
- 6) - mono- or diesters of saturated or unsaturated and linear or branched monocarboxylic acids and of saturated trialcohols,
- 7) - triesters of saturated or unsaturated and linear or branched monocarboxylic acids and of saturated trialcohols having more than 3 carbon atoms,

8)- mono-, di- or triesters of saturated or unsaturated and linear or branched monocarboxylic acids and of unsaturated trialcohols,

9)- mono-, di- or triesters of saturated or unsaturated and linear or branched di- or tricarboxylic acids and of saturated or unsaturated and linear or branched trialcohols,

the total number of carbon atoms of the ester not exceeding 27 if it is not unsaturated and 50 if it

10 comprises at least one unsaturation, the concentration of the ester being greater than 1%, the composition being devoid of cationic surfactant, and the anionic surfactant/amphoteric surfactant ratio by weight being less than or equal to 3.

The presence of cationic surfactants in the compositions according to the invention results in a deterioration in the cosmetic performances of said compositions.

20 Another subject-matter of the invention is the use in cosmetics of the above compositions for cleaning and/or removing makeup from and/or conditioning keratinous substances, such as the hair and the skin.

25 The term "devoid of cationic surfactant" is understood to mean that the composition comprises less than 0.3% by weight of cationic surfactant with respect

to the total weight of the composition, preferably less than 0.1% by weight, and more particularly that the concentration of cationic surfactant is zero. The term "cationic surfactant" does not denote cationic surface-active polymers. Surface-active polymers are not excluded from the composition.

A- WASHING BASE:

The washing base comprises one or more anionic surfactants and one or more amphoteric surfactants.

(i) Anionic surfactant(s):

Their nature does not assume a really critical character within the context of the present invention.

Thus, mention may in particular be made, by way of example of anionic surfactants which can be used, alone or as mixtures, in the context of the present invention, of (nonlimiting list) the salts (in particular alkali metal, especially sodium, salts, ammonium salts, amine salts, aminoalcohol salts or magnesium salts) of the following compounds: alkyl sulfates, alkyl ether sulfates, alkylamido ether sulfates, alkylaryl polyether sulfates or monoglyceride sulfates; alkyl sulfonates, alkyl phosphates, alkylamide sulfonates, alkylaryl sulfonates,  $\alpha$ -olefin sulfonates or paraffin sulfonates; alkyl sulfosuccinates, alkyl ether sulfosuccinates or

alkylamide sulfosuccinates; alkylsulfosuccinamates;  
 alkyl sulfoacetates; alkyl ether phosphates;  
 acylsarcosinates; acylisethionates and N-acyltaurates,  
 the alkyl or acyl radical of all these different  
 5 compounds preferably comprising from 12 to 20 carbon  
 atoms and the aryl radical preferably denoting a phenyl  
 or benzyl group. Mention may also be made, among the  
 anionic surfactants which can be further used, of the  
 salts of fatty acids, such as the salts of oleic,  
 10 ricinoleic, palmitic or stearic acid, or the acids of  
 coconut oil or of hydrogenated coconut oil; or  
 acyllactylates in which the acyl radical comprises 8 to  
 20 carbon atoms. Use may also be made of weakly anionic  
 surfactants, such as alkyl D-galactoside uronic acids  
 15 and their salts, as well as of polyoxyalkylenated (C<sub>6</sub>-  
 C<sub>24</sub>)alkyl ether carboxylic acids, polyoxyalkylenated  
 (C<sub>6</sub>-C<sub>24</sub>)alkylaryl ether carboxylic acids,  
 polyoxyalkylenated (C<sub>6</sub>-C<sub>24</sub>)alkylamido ether carboxylic  
 acids and their salts, in particular those comprising  
 20 from 2 to 50 ethylene oxide groups, and their mixtures.

Use is preferably made of an anionic surface-  
 active agent chosen from sodium, triethanolamine or  
 ammonium (C<sub>12</sub>-C<sub>14</sub>)alkyl sulfates, sodium (C<sub>12</sub>-C<sub>14</sub>)alkyl  
 ether sulfates oxyethylenated with 2.2 mol of ethylene  
 25 oxide, sodium cocoylisethionate and sodium  $\alpha$ -(C<sub>14</sub>-C<sub>16</sub>)-  
 olefin sulfonate.

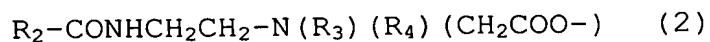


Among the anionic surfactants, it is preferable to use, according to the invention, alkyl sulfate and alkyl ether sulfate salts and their mixtures.

5 (iii) Amphoteric surfactant(s):

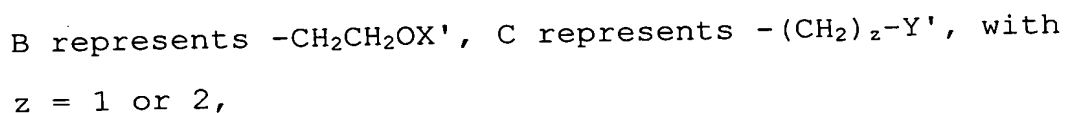
The amphoteric surface-active agents, the nature of which does not assume any critical character within the context of the present invention, may be in particular (nonlimiting list) derivatives of aliphatic  
 10 secondary or tertiary amines in which the aliphatic radical is a linear or branched chain comprising 8 to 22 carbon atoms and comprising at least one water-solubilizing anionic group (for example carboxylate, sulfonate, sulfate, phosphate or phosphonate); mention  
 15 may also be made of (C<sub>8</sub>-C<sub>20</sub>)alkyl betaines, sulfobetaines, (C<sub>8</sub>-C<sub>20</sub>)alkyl amido(C<sub>1</sub>-C<sub>6</sub>)alkyl betaines or (C<sub>8</sub>-C<sub>20</sub>)alkyl amido(C<sub>1</sub>-C<sub>6</sub>)alkyl sulfobetaines.

Mention may be made, among the amine derivatives, of the products sold under the name  
 20 Miranol<sup>®</sup>, as disclosed in Patents US-2,528,378 and US-2,781,354 and with structures:



25 in which: R<sub>2</sub> denotes an alkyl radical derived from an acid R<sub>2</sub>-COOH present in hydrolyzed coconut oil or a heptyl, nonyl or undecyl radical, R<sub>3</sub> denotes a

5 in which:



10 Y' denotes  $\text{-COOH}$  or the  $\text{-CH}_2\text{-CHOH-SO}_3\text{H}$  radical

15 radical.

25 Mention may be made, by way of example, of the  
cocoamphodiacetate sold under the trade name  
Miranol® C2M concentrate by the company Rhône-Poulenc.

According to the present invention, it is more particularly preferred to use the amphoteric surface-active agents belonging to the group of the betaines, such as the alkyl betaines, in particular the cocoyl betaine sold under the name "Dehyton AB 30" as an aqueous solution comprising 30% of AM by the company Henkel, or the alkylamido betaines, such as Tegobetaine® F50, sold by the company Goldschmidt.

The minimum amount of washing base is that just sufficient to confer a satisfactory foaming and/or detergent power on the final composition, and excessively large amounts of washing base do not really contribute additional advantages.

Thus, according to the invention, the washing base can represent from 4% to 50% by weight, preferably from 6% to 35% by weight and more preferably still from 8% to 25% by weight of the total weight of the final composition.

By way of indication, the detergent compositions in accordance with the invention generally exhibit the following compositions:

(i) anionic surfactant(s): from 3 to 30% by weight, preferably from 5 to 20% by weight, with respect to the total weight of the detergent composition;

(ii) amphoteric surfactant(s): from 1 to 20% by weight, preferably from 1.5 to 15% by weight, with respect to the total weight of the composition.

The anionic surfactant/amphoteric surfactant ratio by weight is preferably between 0.2 and 3, more particularly between 0.4 and 2.5.

#### B- Carboxylic acid esters

The water-insoluble carboxylic acid esters according to the invention are insoluble in water at a concentration of greater than or equal to 0.1% by weight in water at 25°C, that is to say that they do not form a transparent isotropic solution in water.

The water-insoluble carboxylic acid esters according to the invention can comprise hydroxyl groups.

The carboxylic acid esters according to the invention are generally chosen from:

1)- monoesters of saturated or unsaturated and linear or branched C<sub>1</sub>-C<sub>49</sub>, preferably C<sub>3</sub>-C<sub>30</sub>, monocarboxylic acids and of saturated or unsaturated and linear or branched C<sub>1</sub>-C<sub>49</sub>, preferably C<sub>2</sub>-C<sub>30</sub>, monoalcohols.

Mention may be made, among these monomers, of cetyl lactate, C<sub>12</sub>-C<sub>15</sub> alkyl lactate, isostearyl lactate, lauryl lactate, linoleyl lactate, oleyl lactate, (iso)stearyl octanoate, isocetyl octanoate, octyl octanoate, cetyl octanoate, isodecyl octanoate, isononyl isononanoate, octyl isononanoate, 2-ethylhexyl

isononate, octyl palmitate, octyl pelargonate, octyl stearate, octyldodecyl erucate, oleyl erucate, ethyl and isopropyl palmitates, 2-ethylhexyl palmitate, isopropyl myristate, butyl myristate, hexyl stearate,

5 butyl stearate, isobutyl stearate, hexyl laurate or tridecyl erucate.

2)- di- or triesters of saturated or unsaturated and linear or branched  $C_2-C_{48}$ , preferably  $C_3-C_{30}$ , di- or tricarboxylic acids and of saturated or unsaturated and  
10 linear or branched  $C_1-C_{49}$ , preferably  $C_2-C_{30}$ , monoalcohols.

Mention may be made, among these esters, of diethyl sebacate, diisopropyl sebacate, diisopropyl adipate, di(n-propyl) adipate, dioctyl adipate, dioctyl  
15 maleate, triisopropyl citrate, trioylel citrate or dioctyl malate.

3)- mono-, di- or triesters of saturated or unsaturated and linear or branched  $C_2-C_{49}$ , preferably  $C_3-C_{30}$ , di- or tricarboxylic acids and of saturated or unsaturated and  
20 linear or branched  $C_1-C_{49}$ , preferably  $C_2-C_{30}$ , dialcohols.

Mention may be made, among these esters, of propylene glycol dicaprylate and dicaprate.

4)- monoesters of saturated or unsaturated and linear or branched  $C_1-C_{48}$ , preferably  $C_3-C_{30}$ , monocarboxylic  
25 acids and of saturated or unsaturated and linear or branched  $C_2-C_{49}$ , preferably  $C_3-C_{30}$ , dialcohols.

Mention may be made, among these esters, of propylene glycol monostearate, tripropylene glycol monostearate, diethylene glycol monostearate or diethylene glycol monooleate.

- 5 5)- di- or triesters of saturated or unsaturated and linear or branched  $C_1-C_{46}$ , preferably  $C_3-C_{30}$ , monocarboxylic acids and of unsaturated  $C_2-C_{48}$ , preferably  $C_4-C_{30}$ , dialcohols or of saturated dialcohols having more than 4 carbon atoms and preferably  $C_5-C_{48}$
- 10 dialcohols and more particularly still  $C_5-C_{30}$  dialcohols.

Mention may be made, among these esters, of neopentyl glycol dilaurate, dipropylene glycol dioctanoate, 2-butene-1,4-diol dioctanoate or 2-butene-1,4-diol distearate.

- 15 6)- mono- or diesters of saturated or unsaturated and linear or branched  $C_1-C_{47}$ , preferably  $C_3-C_{30}$ , monocarboxylic acids and of saturated  $C_3-C_{49}$ , preferably  $C_3-C_{30}$ , trialcohols.

20 Mention may be made, among these esters, of glyceryl undecylenate, glyceryl monolaurate, glyceryl dilaurate, glyceryl monocaprinate, glyceryl monocaprylate, glyceryl monostearate, glyceryl monooleate or glyceryl dioleate.

- 25 7)- triesters of saturated or unsaturated and linear or branched  $C_1-C_{46}$ , preferably  $C_3-C_{30}$ , monocarboxylic acids and of saturated trialcohols having more than 3 carbon

atoms and preferably C<sub>4</sub>-C<sub>47</sub> trialcohols and more particularly C<sub>4</sub>-C<sub>30</sub> trialcohols.

Mention may be made, among these esters, of trimethylolpropane trihexanoate or 1,2,6-hexanetriol tripentanoate.

8)- mono-, di- or triesters of saturated or unsaturated and linear or branched C<sub>1</sub>-C<sub>47</sub>, preferably C<sub>3</sub>-C<sub>30</sub>, monocarboxylic acids and of unsaturated C<sub>3</sub>-C<sub>49</sub>, preferably C<sub>3</sub>-C<sub>30</sub>, trialcohols.

10 Mention may be made, among these esters, of 2,5-dimethyl-3-hexyne-1,2,5-triol laurate.

10 9)- mono-, di- or triesters of saturated or unsaturated and linear or branched C<sub>2</sub>-C<sub>47</sub>, preferably C<sub>3</sub>-C<sub>30</sub>, di- or tricarboxylic acids and of saturated or unsaturated and 15 linear or branched C<sub>3</sub>-C<sub>48</sub>, preferably C<sub>3</sub>-C<sub>30</sub>, trialcohols.

Mention may be made, among these esters, of glyceryl citrate or glyceryl monosuccinate.

The carboxylic acid esters are more particularly chosen from the compounds from classes 1), 2), 4), 6) and 9).

The carboxylic acid ester or esters can be used in the compositions in accordance with the invention in concentrations generally of between 1.2 and 15% and preferably between 1.5 and 10% by weight with respect to the total weight of the composition and more particularly still from 2 to 8% by weight.

According to an embodiment of the invention, the compositions can additionally comprise a water-soluble salt and/or a water-soluble mono- or polyhydroxyl alcohol.

5 According to another embodiment of the invention, the compositions comprising monoesters of monocarboxylic acid and of monoalcohol, the total carbon number of which is greater than or equal to 24 and less than or equal to 27, mono- and diesters of  
10 saturated monoacids and of glycerol, the total carbon number of which is greater than or equal to 17, or diesters of branched monoalcohols and of unsaturated diacids generally comprise a water-soluble salt and/or a water-soluble mono- or polyhydroxyl alcohol.

15 The term "water-soluble in water" is understood to mean compounds which are soluble in water at a concentration of greater than or equal to 0.1% by weight in water at 25°C, that is to say that they form a transparent isotropic solution.

20 The water-soluble salts according to the invention are preferably salts of mono- or divalent metals and of an inorganic or organic acid.

Mention may in particular be made of sodium chloride, potassium chloride, calcium chloride,  
25 magnesium sulfate, sodium citrate or the sodium salts of phosphoric acid. Preferably, monovalent metal salts are used. Sodium chloride is particularly preferred.



The water-soluble salts are generally present at concentrations of between 0.1 and 10% by weight and preferably between 0.5 and 5% by weight with respect to the total weight of the composition.

5           The water-soluble mono- or polyhydroxyl alcohols are in particular lower C<sub>1</sub>-C<sub>6</sub> alcohols, such as ethanol, isopropanol, tert-butanol or n-butanol, polyols, such as alkylene glycols, for example propylene glycol or glycerol, and polyalkylene glycols, 10 or glycol ethers.

          The water-soluble alcohol or alcohols can be used in concentrations generally of between 0.1 and 20% by weight and more particularly between 0.2 and 10% by weight with respect to the total weight of the 15 composition.

          The detergent compositions according to the invention exhibit a final pH generally of between 3 and 8. This pH is preferably between 4 and 6.5. The pH can be conventionally adjusted to the desired value by 20 addition of a base (organic or inorganic) to the composition, for example sodium hydroxide, aqueous ammonia or a primary, secondary or tertiary (poly)amine, such as monoethanolamine, diethanolamine, triethanolamine, isopropanolamine or 1,3- 25 propanediamine, or alternatively by addition of an inorganic or organic acid, preferably citric acid or hydrochloric acid.

The cosmetically acceptable aqueous medium can be composed solely of water or of a mixture of water and of a cosmetically acceptable solvent.

The compositions in accordance with the invention can comprise, in addition to the combination defined above, viscosity regulating agents, such as thickening agents. Mention may in particular be made of scleroglucans, xanthan gums, fatty acid alkanolamides, alkyl ether carboxylic acid alkanolamides optionally oxyethylenated with up to 5 mol of ethylene oxide, such as the product sold under the name "Aminol A15" by the company Chem Y, crosslinked poly(acrylic acid)s and crosslinked acrylic acid/C<sub>10</sub>-C<sub>30</sub> alkyl acrylate copolymers. These viscosity regulating agents are used in the compositions according to the invention in proportions which can range up to 10% by weight with respect to the total weight of the composition.

The compositions in accordance with the invention can also comprise up to 5% of pearlescent or opacifying agents well known in the state of the art, such as, for example, fatty alcohols, sodium or magnesium palmitates, sodium or magnesium stearates and hydroxystearates, fatty alcohol, acylated derivatives comprising a fatty chain, such as ethylene glycol or polyethylene glycol distearates, or ethers comprising fatty chains, such as, for example, distearyl ether or 1-(hexadecyloxy)-2-octadecanol.

The compositions in accordance with the invention can additionally optionally comprise other agents having the effect of improving the cosmetic properties of hair or of the skin without, however, detrimentally affecting the stability of the compositions. Mention may be made, in this respect, of cationic surface-active agents, anionic or nonionic or cationic or amphoteric polymers, proteins, protein hydrolysates, ceramides, pseudoceramides, fatty acids comprising linear or branched  $C_{16}$ - $C_{40}$  chains, such as 18-methyleicosanoic acid, hydroxy acids, vitamins, panthenol, volatile or nonvolatile silicones, other than the silicones of the invention, which are soluble and insoluble in the medium, UV screening agents, moisturizing agents, antidandruff or antiseborrheic agents, agents for combating free radicals, and their mixtures.

According to a particularly preferred form, the compositions according to the invention additionally comprise at least one cationic polymer.

The cationic polymers which can be used in accordance with the present invention can be chosen from all those already known per se as improving the cosmetic properties of hair treated with detergent compositions, namely, in particular, those disclosed in patent application EP-A-0,337,354 and in French patent

applications FR-A-2,270,846, 2,383,660, 2,598,611,  
2,470,596 and 2,519,863.

In a still more general way, within the  
meaning of the present invention, the expression

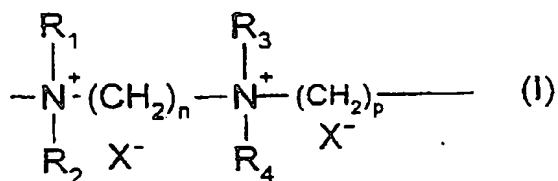
5 "cationic polymer" denotes any polymer comprising  
cationic groups and/or groups which can be ionized to  
cationic groups.

The cationic polymers which can be used  
according to the invention preferably have a cationic  
10 charge density of greater than or equal to 0.2 meq/g  
and more particularly of between 0.2 and 8.5 meq/g.

Among all the cationic polymers capable of  
being used in the context of the present invention,  
preference is given to the employment of quaternary  
15 derivatives of cellulose ether, such as the products  
sold under the name "JR 400" by the company Union  
Carbide Corporation, cyclopolymers, in particular  
diallyldimethylammonium salt homopolymers and  
copolymers of diallyldimethylammonium salt and of  
20 acrylamide, in particular the chlorides, sold under the  
names "Merquat 100", "Merquat 550" and "Merquat S" by  
the company Merck, cationic polysaccharides and more  
particularly guar gums modified by  
2,3-epoxypropyltrimethylammonium chloride, sold, for  
25 example, under the name "Jaguar C13S" by the company  
Meyhall, optionally crosslinked homopolymers and  
copolymers of (meth)acryloyloxyethyltrimethylammonium

salt, sold by the company Allied Colloids as a 50% solution in mineral oil under the trade names Salcare SC92 (crosslinked copolymer of methacryloyloxyethyltrimethylammonium chloride and of acrylamide) and Salcare SC95 (crosslinked homopolymer of methacryloyloxyethyltrimethylammonium chloride), or quaternary copolymers of vinylpyrrolidone and of vinylimidazole salt, such as the products sold by BASF under the names Luviquat FC 370, Luviquat FC 550, Luviquat FC 905 and Luviquat HM-552.

Use may also be made of polymers which are composed of repeat units corresponding to the formula:



in which R<sub>1</sub>, R<sub>2</sub>, R<sub>3</sub> and R<sub>4</sub>, which are identical or different, denote an alkyl or hydroxyalkyl radical having from 1 to 4 carbon atoms approximately, n and p are integers varying from 2 to 20 approximately and X<sup>-</sup> is an anion derived from an inorganic or organic acid.

A particularly preferred compound of formula (I) is that in which R<sub>1</sub>, R<sub>2</sub>, R<sub>3</sub> and R<sub>4</sub> represent a methyl radical and n = 3, p = 6 and X = Cl, known as Hexadimethrine chloride according to the INCI (CTFA) nomenclature.

According to the invention, the cationic polymer or polymers can represent from 0.001% to 10% by

weight, preferably from 0.005% to 5% by weight and more preferably still from 0.01% to 3% by weight of the total weight of the final composition.

The compositions according to the invention  
5 can also comprise foam synergists, such as C<sub>10</sub>-C<sub>18</sub> 1,2-alkanediols or fatty alkanolamides derived from mono- or from diethanolamine.

Of course, a person skilled in the art will take care to choose this or these optional additional  
10 compounds and/or their amounts so that the solubility of the carboxylic acid esters according to the invention, the stability of the composition and the cosmetic properties intrinsically attached to the composition in accordance with the invention are not,  
15 or not substantially, detrimentally affected by the envisaged addition or additions. The addition of certain compounds, such as pearlescent agents, can render the composition nontransparent.

The transparency can be measured by the  
20 turbidity with a Hach Model 2100 P turbidimeter at 25°C (the device is calibrated with formazine). The turbidity of the compositions according to the invention (in the absence of additional insoluble compounds) is then generally between 0.05 and 100 NTU  
25 and preferably less than 50 NTU. When the ester according to the invention is in the form of dispersed

particles, the size of these particles is preferably less than 5 nanometers.

The foaming power of the compositions according to the invention, characterized by a foam height, is generally greater than 75 mm, preferably greater than 100 mm, measured according to the modified Ross-Miles method (NF T 73-404/ISO696).

The modifications to the method are as follows:

The measurement is carried out at a temperature of 22°C with osmosed water. The concentration of the solution is 2 g/l. The height of the drop is 1 m. The amount of composition which drops is 200 ml. These 200 ml of composition falls in a measuring cylinder with a diameter of 50 mm containing 50 ml of the composition to be tested. The measurement is carried out 5 minutes after the composition has finished being run in.

These compositions can be provided in the form of more or less thickened liquids, of creams or of gels and they are mainly suitable for washing or caring for keratinous substances, in particular the hair and the skin and more particularly still the hair.

Another subject-matter of the invention is a process for washing and for conditioning keratinous substances, such as, in particular, the hair, which consists in applying, to wetted said substances, an effective amount of the composition as defined above

and in then rinsing with water, after an optional  
leave-in time.

The compositions according to the invention  
are preferably used as shampoos for washing and  
5 conditioning the hair and they are applied, in that  
case, to wet hair in amounts which are effective for  
washing it, and the foam generated by massaging or  
rubbing with the hands is subsequently removed, after  
an optional leave-in time, by rinsing with water, it  
10 being possible for the operation to be repeated one or  
more times.

The compositions in accordance with the  
invention can also be used as shower gels for washing  
and conditioning the hair and/or the skin, in which  
15 case they are applied to the wet skin and/or hair and  
are rinsed after application.

Concrete but in no way limiting examples  
illustrating the invention will now be given.



**EXAMPLE 1**

Four shampoo compositions in accordance with the invention were prepared.

	1	2	3	4
- Sodium lauryl ether sulfate (70/30 C <sub>12</sub> /C <sub>14</sub> ), comprising 2.2 mol of ethylene oxide, as an aqueous solution comprising 70% of AM	15 g AM	15 g AM	5.25 g AM	15 g AM
- Cocoyl betaine comprising 30% of AM (Dehyton AB 30)	5 g AM	5 g AM	9 g AM	5 g AM
- Isopropyl palmitate	2 g			
- Isodecyl neopentanoate		2 g		6 g
- Isopropyl myristate			2 g	
- Diallyldimethylammonium chloride homopolymer as an aqueous solution comprising 40% of AM (Merquat 100 from Calgon)	0.4 g AM	0.4 g AM	0.4 g AM	0.4 g AM
- NaCl	4 g	4 g	4 g	4 g
- Fragrance, preservative	q.s.	q.s.	q.s.	q.s.

- Hydrochloric acid, q.s. pH	6.2	6.3	6.8	6.3
- Demineralized water, q.s.	100g	100g	100g	100g
Turbidity (NTU)	41.7	11.9	8.5	7

Composition 1 to 4 according to the invention are transparent and stable (the transparency is evaluated by turbidimetry in NTU (Nephelometric turbidity units)).

Hair treated with these compositions readily disentangles and is smooth from the root of the hair to the tip.

#### EXAMPLE 2

Four shampoo compositions in accordance with the invention were prepared.

	5	6	7	8	9
- Sodium lauryl ether sulfate (70/30 C <sub>12</sub> /C <sub>14</sub> ), comprising 2.2 mol of ethylene oxide, as an aqueous solution comprising 70% of AM (AM = active material)	15 g AM	15 g AM	10 g AM	15 g AM	15 g AM

- Cocoyl betaine comprising 30% of AM (Dehyton AB 30)	5 g AM	5 g AM	10 g AM	5 g AM	5 g AM
- Octyldodecyl ricinoleate				1.2 g	
- Myristyl lactate		2 g			
- Isopropyl myristate	2 g		6 g		
- Di(diisopropyl linoleate)					1.2 g
- Polyquaternium-10 (JR 400 from Union Carbide)	0.4 g AM	0.4 g AM		0.4 g AM	
- NaCl					4 g
- Fragrance, preservative	q.s.	q.s.	q.s.	q.s.	q.s.
- Hydrochloric acid, q.s. pH	6.1	6.1	6.1	6.5	6.5
- Demineralized water, q.s.	100 g	100 g	100 g	100 g	100 g
Turbidity (NTU)	2.9	4.2	2.9	6.5	8.2

Composition 5 to 8 according to the invention are transparent and stable.

Hair treated with these compositions readily disentangles and is smooth from the root of the hair to  
5 the tip.